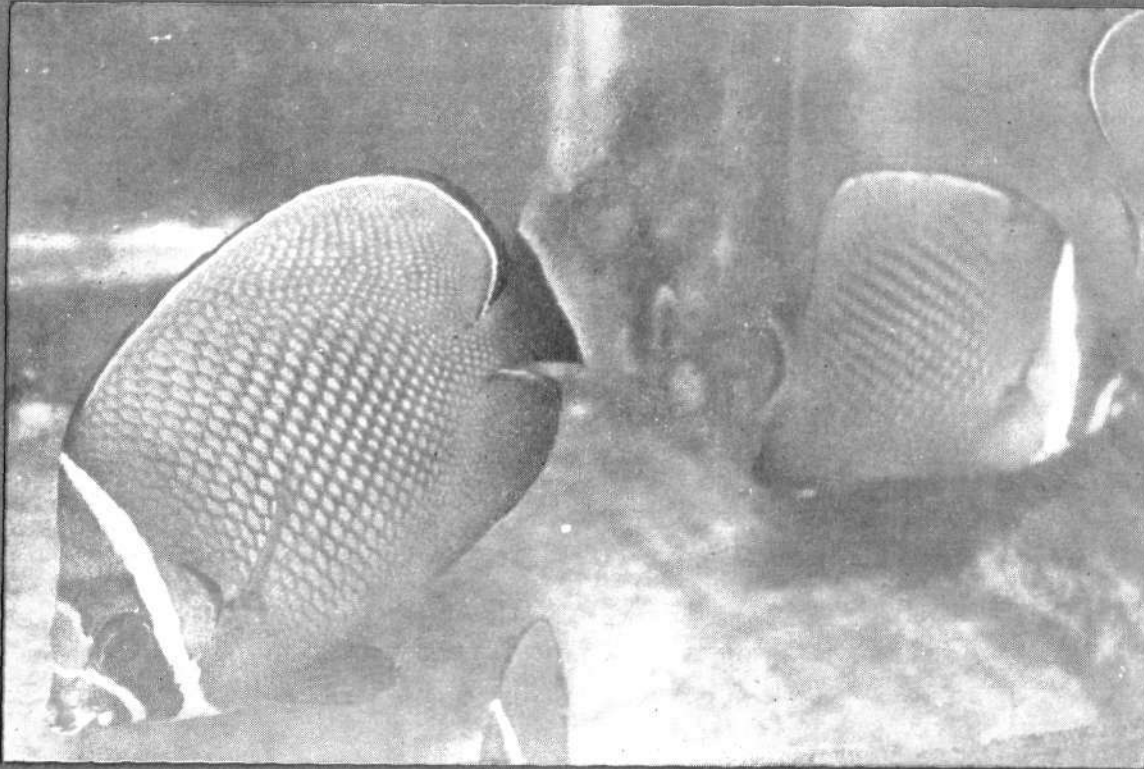




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GENERAL ACCOUNT ON THE PROBLEMS OF MARINE FISHERIES RESEARCH AND DEVELOPMENT IN MAHARASHTRA*

Maharashtra with a coastline of 720 km has a shelf area of about 90,000 sq.km. The EEZ confers an additional 20,000 sq.km approximately for exploitation. At present only 30% of the shelf area upto a depth of about 50 m is intensively exploited. The estimated annual catch from this area in recent years is about three lakh tonnes (compared to two lakh tonnes in early seventies) whereas the potential has been estimated to be 3.7 to 4.0 lakh tonnes (CMFRI & FSI). There is thus scope to increase production in this limited area to a moderate extent which can be done by increase of effort in a phased manner.

It is also to be assessed what is Maharashtra's contribution to the present production of three lakh tonnes since the landings include fish caught from Gujarat waters also. Further, the fishing effort in terms of actual trawling hours appears to be highly variable from season to season and also year to year and there is no reliable data on this aspect. An accurate or a near accurate estimate of catch and effort is a prerequisite for the development and rational exploitation of fisheries of a maritime state. To this end it would be better, if a suitable system could be developed to introduce simple log sheets to indicate area, depth of fishing, number of hauls and duration of each haul, catch details *etc.* on the lines as recommended in the "Workshop on Acquisition and Dissemination of Data on Marine Living Resources" held in 1982 at CMFRI. At least a few selected boats from major landing centres such as New Ferry Wharf and Sassoon Dock could be brought into this system to get an approximate picture of Maharashtra's share in fish production by trawlers.

A survey was conducted by M.T. Muraena in 1977 under the Indo-Polish agreement in the N.W. coast of India. Fishing with bottom and pelagic trawls was conducted between 15° & 24°N in the depth range of 90-360 m to assess the industrial fisheries potential of the area. The survey proved that pelagic mid water trawling was most productive in areas 19°-22°N and 67° - 69°E off Dwaraka and Bombay regions. The catch rate worked out to 1,838 and 1,137 kg/hr respectively, the main categories being horse mackerel and

pomfrets from 54-130 m depth. Catches upto 12 tonnes horse mackerel and 6 tonnes of black pomfret were recorded from these areas during February/March. Other resources that can be economically exploited were ribbon fish, eel and cat fish. Bottom trawling conducted in 90-130 m depth has not proved encouraging in the Maharashtra region. However, squids which are gaining importance due to export value were caught in considerable quantities in areas south of Bombay. It has also been observed at NFW that the commercial trawlers at times brought exclusively cephalopods or coastal tunas thus indicating abundance of these shoals according to season. Though large fishing vessels may not be necessary to tap those various resources occurring beyond 50 m depth area, introduction of medium sized vessels that can sustain absence from the port for about a week will be a feasible attempt.

Though the Marine Fishing Regulation Act has come into force in Maharashtra, it is to be reviewed how far this Act is being enforced. Effective regulations can promote amity between the mechanised and non-mechanised fishing sectors. Self imposed regulations as practised in some of the fishing villages in Tamil Nadu can also be tested through education to avoid confrontation.

The Bombay duck is of commercial importance in Maharashtra and Gujarat. The size class analysis of the fishery showed that smaller sizes dominate in Gujarat waters compared to Maharashtra. It needs to be elucidated how far the stocks occurring in the two states are interdependent and also the migratory habits of the species. There is no information available on the total annual stock in the fishing grounds. The annual yield is, however, found to be highly fluctuating over the years.

Penaeid prawn landings in Maharashtra are on the increase in recent years. A standing stock of 13,000 tonnes per annum has been indicated in the fishing grounds currently exploited from New Ferry Wharf base, the average annual catch being 8,300 tonnes which appears to be within the safe level of exploitation. However, there appears to be scope to increase the catch since prawns are short lived forms and will be lost to the fishery if not harvested. The standing stock in the month of September has been indicated to be very high which suggests that more exploitation can be

* Presented by S. Ramamurthy, Madras Research Centre of CMFRI, Madras.

undertaken during this month in particular. The present mesh size and age at capture appear to be optimum. However, the stocks are to be continuously monitored to take safeguard measures, if warranted. In the offshore regions off Ratnagiri, between 200-500 m depth the FSI has located grounds for deep sea prawns, the potential of which is to be assessed.

Other resources like seer fish caught mainly by drift gill nets hold immense prospects for development in the Maharashtra coast. Multiple trolling using artificial jigs will be worth attempting to tap this resource. The resource of threadfin breams seems to be currently exploited at the optimum level. Any increase in effort may adversely affect the stock. To get sustained yield from the present fishing grounds there is need to increase the cod end mesh size of trawl nets.

There is no information on the molluscan (bivalves and gastropods) resources of the Maharashtra coast. The fishery at present is mostly of a sustenance nature. A regular survey needs to be undertaken to assess the potential resources for proper exploitation.

Capture fisheries has its own limitations in regard to production. In this context aquaculture affords

immense scope to augment production. Maharashtra has a brackishwater area of about 81,000 ha of which 1,800 ha is reported to be utilised for fish cultivation. The state has to identify suitable areas for farming. Fish cum prawn seed resources survey also has to be undertaken. The state is bestowed with large sized penaeid prawns such as *Penaeus japonicus* and *P. penicillatus* which offer ample scope for cultivation in controlled conditions. Even on a modest scale, if 30% of the brackishwater area is brought under cultivation a production of 15 to 20,000 tonnes of prawns can be achieved. Further, Maharashtra has a number of sheltered bays where culture of organisms like mussels, oysters in rafts and cages and net cage culture of fin fishes could be undertaken.

To sum up, the strategy to boost marine fish production in Maharashtra will be to increase production from the currently exploited grounds through increased effort in a phased manner, effective utilisation of the EEZ resources through offshore fishing, improvement of infrastructure facilities such as berthing, cold storage, etc., introduction of new fish products which will have consumer acceptance in the domestic market, popularise the non conventional resources and proper utilisation of the brackishwater areas and near shore sheltered waters through suitable culture techniques.

